FORM NO. 3314-572 REV. A

TORO®

MODEL NO. 30185 – 10001 & UP

OPERATOR'S MANUAL

PROLINE 185 MID SIZE MOWER
HYDRO

TORO
THIS UNIT CONFORMS TO ANSI B71.4 - 1984

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of the machine read and understand the contents of this manual before the engine is ever started. Pay particular attention to the SAFETY INSTRUCTIONS highlighted by this symbol —

The safety alert symbol means CAUTION, WARNING or DANGER — personal safety instruction. Failure to comply with the instruction may result in personal injury.

FOREWORD

The Proline mid size mowers have advanced concepts in engineering, design and safety; and if maintained properly, will give excellent service.

Since this is a high-quality product, Toro is concerned about the future use of the machine and safety of the user. Therefore, read this manual to familiarize yourself with proper set-up, operation and maintenance instructions. The major sections of the manual are:

1. Safety Instructions
2. Set-up Instructions
3. Before Operating
4. Operation
5. Maintenance

Certain information in this manual is emphasized. DANGER, WARNING and CAUTION identify personal safety related information. IMPORTANT identifies mechanical information demanding special attention. Be sure to read this directive because it deals with the possibility of damaging a part or parts of the machine. NOTE identifies general information worthy of special attention.

TABLE OF CONTENTS

	Page
SAFETY INSTRUCTIONS	2–4
SAFETY AND INSTRUCTION DECALS	4
SPECIFICATIONS	5
LOOSE PARTS	5
SET-UP INSTRUCTIONS	6–7
BEFORE OPERATING	8–9
CONTROLS	10
OPERATING INSTRUCTIONS	10–11
MAINTENANCE	12–18
Servicing Air Cleaner	12
Changing Crankcase Oil & Filter	12
Replacing Hydraulic Filter	13
Bleeding Hydraulic System	13
Checking Hydraulic Lines & Hoses	13
Fuel Filter Replacement	14
Neutral Adjustment	14
Replacing Spark Plug	14
Adjusting Throttle-Choke Control	15
Adjusting Carburetor	15
Adjusting & Replacing Traction Belt	16
Adjusting Clutch	16
Cleaning Cooling System	16
WIRING SCHEMATIC	17
HYDRAULIC SCHEMATIC	18
IDENTIFICATION AND ORDERING	18
MAINTENANCE CHART	19
THE TORO PROMISE	Back Cover

SAFETY INSTRUCTIONS

The safety alert symbol means CAUTION, WARNING or DANGER — "personal safety instruction". Read and understand the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.

The Proline mid size mower was tested and certified by TORO for compliance with the B71.4 - 1984 specifications of the American National Standard Institute. Hazard control and accident prevention are dependent upon the awareness, concern, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the machine. Improper use or maintenance of the machine can result in injury or death. To reduce the potential for injury or death, comply with the following safety instructions.

BEFORE OPERATING

1. Read and understand the contents of this Operator's Manual before operating the machine. Become familiar with all controls and know how to stop quickly. A free replacement manual is available by sending complete Model and Serial Number to:

   The Toro Company
   8111 Lyndale Avenue South
   Minneapolis, Minnesota 55420

2. Never allow children to operate the machine. Do not allow adults to operate machine without proper instruction. Only trained operators who have read this manual should operate this machine.

3. Never operate the machine when under the influence of drugs or alcohol.

SAFETY INSTRUCTIONS

4. Before attempting to start engine, make sure control bar pivots freely forward and reverse and returns to neutral when released.

5. Remove all debris or other objects that might be picked up and thrown by the cutter blades. Keep all bystanders away from the mowing area.

6. Keep all shields and safety devices in place. If a shield, safety device or decal is illegible or damaged, repair or replace it before operation is commenced. Also tighten any loose nuts, bolts and screws to assure machine is in safe operating condition.

7. Do not operate machine while wearing sandals, tennis shoes, sneakers or shorts. Also, do not wear loose fitting clothing which could get caught in moving parts. Always wear long pants and substantial shoes. Wearing safety glasses, safety shoes and a helmet is advisable and required by some local ordinances and insurance regulations.

8. Fill fuel tank with gasoline before starting the engine. Avoid spilling gasoline. Since gasoline is flammable, handle it carefully.

A. Use an approved gasoline container.

B. Do not fill tank while engine is hot or running.

C. Do not smoke while handling gasoline.

D. Fill fuel tank outdoors and up to about one inch (25 mm) from top of the tank, not the filler neck.

E. Wipe up any spilled gasoline.

WHILE OPERATING

9. Start engine when machine is on level ground and control bar is in neutral position.

10. Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could possibly be deadly.

11. Using the machine demands attention, and to prevent loss of control:

A. Mow only in daylight or when there is good artificial light.

B. Watch for holes or other hidden hazards.

C. Do not drive close to a sand trap, ditch, creek or other hazard.

D. Reduce speed when making sharp turns and when turning on hillsides.

12. The grass deflector must always be installed and in down position on the side discharge cutting unit, except when using the optional grass catcher. This product is designed to drive objects into the ground where they lose energy quickly in grassy areas. **However, don't take an injury risk!!** When a person or pet appears unexpectedly in or near the mowing area, **STOP MOWING**. Careless operation, combined with terrain angles, ricochets, or improperly positioned guards, can lead to thrown object injuries. Do not resume mowing until area is cleared. If the cutting unit discharge area ever plugs, shut engine off before removing the obstruction.

13. Never raise the cutting unit while the blades are rotating.

14. If the cutting blades strike a solid object or the machine vibrates abnormally, shut the engine off. Remove wire from spark plug to prevent possibility of accidental starting. Check cutting unit and traction unit for damage and malfunctioning parts. Repair any damage before restarting the engine and operating the cutting unit. Be sure blades are in good condition and blade bolts are tight.

15. Cut grass slopes carefully. Do not start, stop, or turn suddenly.

16. Do not touch engine or muffler while engine is running or soon after it is stopped. These areas could be hot enough to cause a burn.

17. Before leaving the operator's position — behind handle or leaving mower unattended, park machine on a level surface, release control bail and control bar, shut OFF engine and remove key from ignition.

MAINTENANCE

18. Disconnect wire from spark plug to prevent accidental starting of the engine when servicing, adjusting or storing the machine.

19. If tractor and mower must be tipped to perform maintenance or an adjustment, drain gasoline from fuel tank and oil from crankcase.

20. When operating unit, always use reference handle in conjunction with control bar to guide machine.

21. To reduce potential fire hazard, keep the engine free of excessive grease, grass, leaves and accumulations of dirt.

22. Be sure machine is in safe operating condition by keeping nuts, bolts and screws tight. Check the blade mounting bolts and nuts frequently to be sure they are tightened to specification.

23. If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing and other parts of the body away from the cutting unit blades and other moving parts.

SAFETY INSTRUCTIONS

24. Do not overspeed the engine by changing governor settings. To be sure of safety and accuracy, have an Authorized TORO Proline Service Dealer check maximum engine speed with a tachometer.

25. Make sure all hydraulic line connectors are tight, and all hydraulic hoses and lines are in good condition before applying pressure to the system.

26. Keep body and hands away from pin hole leaks in hydraulic lines that eject high pressure hydraulic fluid. Use cardboard or paper to find hydraulic leaks. Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

27. Before disconnecting or performing any work on the hydraulic system, all pressure in system must be relieved by stopping engine.

28. Engine must be shut off before checking oil or adding oil to the crankcase.

29. Allow engine to cool before storing mower in any enclosure such as a garage or storage shed. Make sure the mower fuel tank is empty if machine is to be stored in excess of 30 days. Do not store mower near any open flame or where gasoline fumes may be ignited by a spark. Always store gasoline in a safety-approved, red metal container.

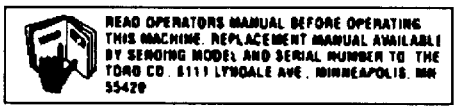
30. Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized Toro Proline Service Dealer. To ensure optimum performance and safety, always purchase genuine TORO replacement parts and accessories to keep the Toro all TORO. NEVER USE "WILL-FIT" REPLACEMENT PARTS AND ACCESSORIES MADE BY OTHER MANUFACTURERS. Look for the TORO logo to assure genuineness. Using unapproved replacement parts and accessories could void the warranty of The Toro Company.

SAFETY AND INSTRUCTION DECALS

The following decals are installed on the machine. If any become damaged or illegible, replace it. The decal part number is listed below and in your parts catalog. Replacement can be ordered from your Authorized Toro Distributor.

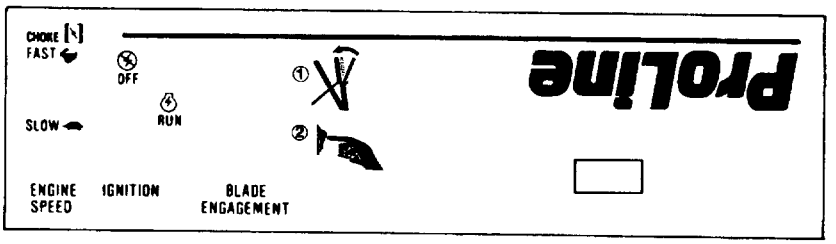
ON CONTROL BAR
(Part No. 82-2610)

ON UPPER HANDLE
(Part No. 82-4590)

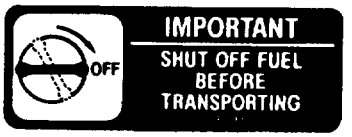


ON CONTROL PANEL
(Part No. 65-3090)

ON CONTROL PANEL
(Part No. 71-1280)



ON CONTROL PANEL
(Part No. 82-7721)



ON OIL COOLER
(Part No. 74-0490)

ON RIGHT SIDE OF ENGINE
(Part No. 63-8440)

SPECIFICATIONS

14 hp Kohler Engine: four cycle, electric start, vertical shaft engine has output of 14 hp @ 3600 RPM and 21.3 ft-lb torque @ 2500 RPM. Displacement is 24.3 cubic inches. Crankcase oil capacity is 4 pints w/ filter. Correct spark plug is Champion RC12 YC or equivalent. Spark arrester muffler.

Frame: 16 ga. formed and welded steel box for lower frame, 1/4" x 4.0" formed upper frame and 1/4" x 5.0" formed steel motor support.

Handle: 1-1/4" dia.,14 ga. tubing bolted to rear frame. Height adjustable from 31" to 37" for operator comfort.

Controls: Throttle, control bar, deck engagement control bail, deck engagement switch, ignition switch and hour meter are conveniently located for operator comfort.

Wheels and Tires: 6.5 x 13 pneumatic tires are mounted on welded steel wheels. Recommended tire pressure is 15 psi.

Fuel Tank Capacity: 5 Gallons.

Battery: 12 volt, lead acid, 32 amp hours.

Traction Drive: Hydraulic drive consisting of twin closed circuit systems. Each circuit consists of pump and a motor to drive each wheel independently. The charge/cooling circuits of the two systems are combined at the pump case drains and flow through an oil cooler, expansion tank and filter.

Hydraulic Filter: 25 micron, spin on type.

Expansion Tank Capacity: 1.75 quarts.

Ground Speed @ 3200 Engine rpm:
Forward 0-5.5 mph
Reverse 0-2.0 mph

Deck Drive: Electromagnetic clutch.

Service Brakes: Hydraulic braking from pumps and motors.

Dimensions:

Width	33.5 in.
Height	43.5 in.
Length	43 in.
Handle end to axle	30.5 in.
Weight	325 lb.

Specifications and design subject to change without notice.

LOOSE PARTS

NOTE: Use this chart as a checklist to assure all parts have been received. Without these parts, total set-up cannot be completed.

Description	Qty.	Use
Flange Capscrew 3/8 - 16 X 1" Lg. Flangenut 3/8-16	2 2	Secure upper handle to frame
Carriage Bolt Latch Spacer Handle Knob Bolt Retainer	1 1 1 1	Secure reference handle to upper handle
Keys	2	Use in ignition switch
Battery Battery Holder Battery Pad Capscrew 3/8-16 X 1-3/4" Lg. Locknut 3/8-16 Battery Strap Battery Support Rod Lock Nut 1/4-20 Carriage Bolt 5/16-18 Locknut 5/16-18 Terminal Boot	1 2 2 2 2 1 2 2 2 2 2	Install battery
Hydraulic Filter	1	Use for initial hydraulic filter change
Operator's Manual Parts Catalog Registration Card	1 1 1	Read before operating machine Fill out and return to Toro

SET-UP INSTRUCTIONS

INSTALL UPPER HANDLE (Fig. 1)

1. Rotate handle upward aligning mounting holes with holes in frame. Secure each side of handle to frame with a 3/8 -16 x 1" lg. flange capscrew and flange nut. Tighten all four handle mounting screws and nuts.

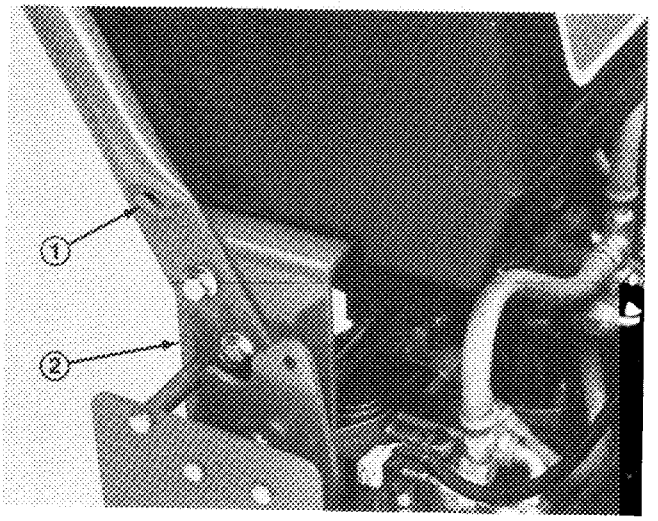


Figure 1
1. Upper handle
2. Frame

INSTALL WHEELS (Fig. 2)

1. Mount wheels to wheel motor hubs with lug nuts (4 Each). Torque nuts to 50-70 ft-lb.

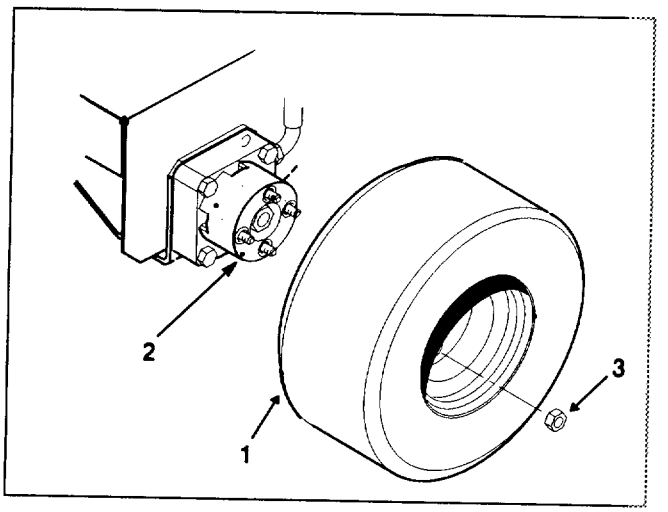


Figure 2
1. Wheel
2. Hub
3. Lug nut

INSTALL CONTROL RODS (Fig. 3 & 4)

1. Mount control rod fitting ends to mounting holes in pivot assemblies (from outside) with clevis pins, washers and hairpin cotters.

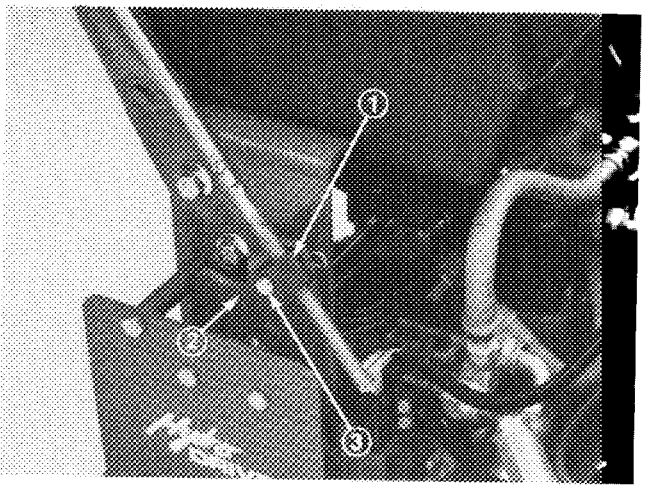


Figure 3
1. Control rod fitting
2. Pivot assembly
3. Clevis pin, washer & hairpin cotter

3. Upon completion of set up, check to make sure machine tracks straight when pushing control bar forward. If machine moves to one side or the other when pushing control bar straight ahead, an adjustment to one of the control rods is required. Proceed to next step for adjustment procedure.

4. On the side of machine to which machine turned, remove hairpin cotter and washer securing end of control rod to upper control bar, thread rod out of rod fitting to desired position and reinstall to control bar with washer and hairpin cotter. Check operation and repeat procedure until machine moves in straight direction.

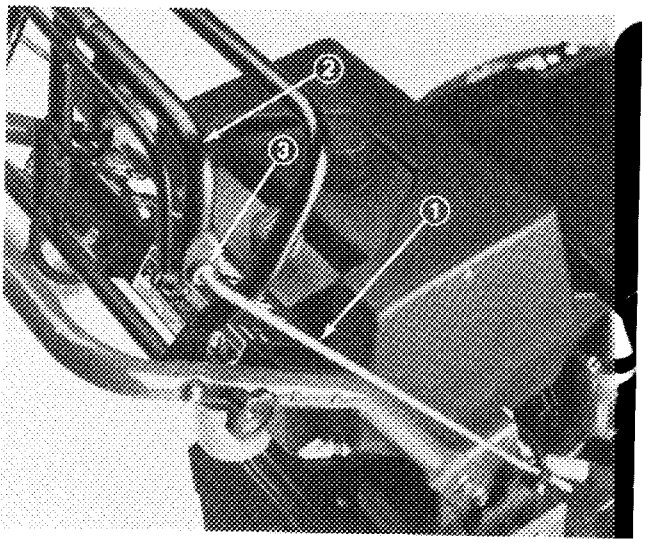


Figure 4
1. Control rod
2. Upper control bar
3. Washer & hairpin cotter

SECURE REFERENCE HANDLE (Fig. 5)

1. Pivot handle upward until slot in bracket is aligned with thru holes in upper handle.

SET-UP INSTRUCTIONS

2. Loosely secure handle assembly bracket to upper handle with a carriage bolt, latch spacer, handle knob and bolt retainer as shown in fig. 5.

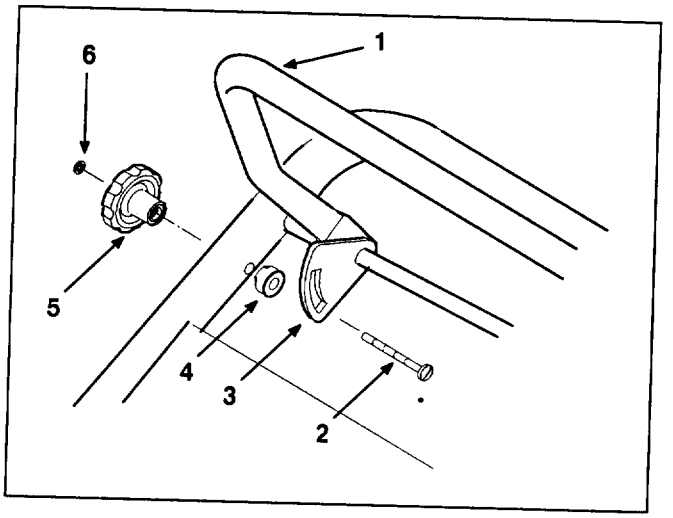


Figure 5

1. Handle assembly
2. Carriage bolt
3. Handle bracket
4. Latch spacer
5. Handle knob
6. Bolt retainer

INSTALL BATTERY (Fig. 6 & 7)

1. Mount battery holders to left rear corner or cutting unit carrier frame with (2) 3/8–16 x 1-3/4" lg. capscrews and locknuts.

2. Peel off backing from battery pads and affix pads to battery holder, positioning as shown in Fig.6. Rubber battery pads should be centered on battery holders.

3. Fill battery with electrolyte and charge, refer to ACTIVATING AND CHARGING BATTERY, page 7.

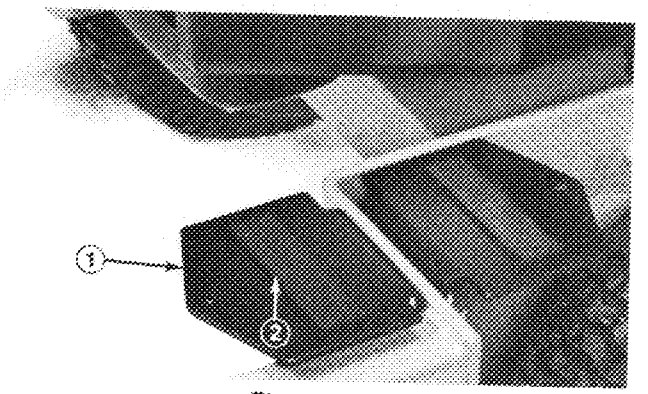


Figure 6

1. Battery holders
2. Battery pads

4. Position battery onto holders with terminal posts toward engine. Battery should be centered on battery holders.

5. Install red terminal boot onto positive battery cable the black terminal boot onto the negative battery cable.

6. Install the positive battery cable to positive (+) battery terminal and the negative battery cable to the negative (–) battery terminal and secure with carriage bolts and locknuts.

WARNING

Connecting cables to the wrong post could result in personal injury and/or damage to the electrical system. Make sure battery or cables do not interfere or rub on engine.

7. Mount battery to holders with (2) support rods, battery clamp and (2) locknuts. Position support rods in mounting holes as shown in fig. 7. Tighten locknuts so battery is held securely in postion and will not slide. DO NOT OVERTIGHTEN.

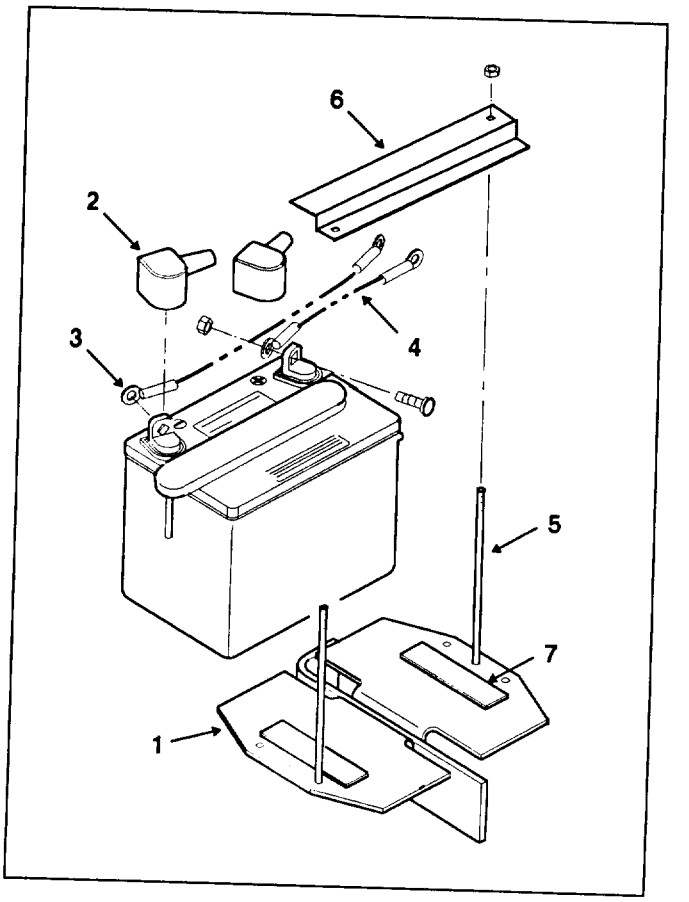


Figure 7

1. Battery holder
2. Battery terminal boot
3. Negative battery cable
4. Positive battery cable
5. Battery support rod
6. Battery clamp
7. Battery pad

BEFORE OPERATING

ACTIVATE AND CHARGE BATTERY (12 VOLT)

Since battery is not filled with electrolyte or activated, the battery, if you have not already done so, must be removed from the machine so it can be filled with electrolyte and charged. Bulk electrolyte with 1.260 specific gravity must be purchased from a local battery supply outlet. Remove the battery and activate it as follows:

1. Remove filler cap from battery and slowly fill each cell until electrolyte is just above the plates. To obtain best results, let battery set for 20 minutes. Add electrolyte to the maximum capacity

2. Leave filler cap off and connect a 3 to 4 amp battery charger to the battery posts. Charge the battery at a rate of 4 amperes or less for 4 hours.

3. When battery is charged, disconnect charger from electrical outlet and battery posts.

4. Slowly add electrolyte to each cell until level is up to fill ring. Install filler cap.

IMPORTANT: Do not overfill battery. Electrolyte will overflow onto other parts of the machine and severe corrosion and deterioration will result.

WARNING

Electrolyte gases are explosive and can cause serious injury to eyes, lungs and skin. Wear safety goggles and rubber gloves when working with electrolyte or battery. Charge the battery in a well ventilated place so gasses produced while charging can dissipate. Since the gases are explosive, keep open flames and electrical spark away from the battery; do not smoke. Nausea may result if the gases are inhaled. Unplug charger from electrical outlet before connecting to or disconnecting charger leads from battery posts.

CHECK ENGINE OIL LEVEL (Fig. 8)

The Kohler engine is shipped from the factory with 4 pints of 10W30 oil in the crankcase, however check level of oil before starting engine and after every 5 hours of operation. Maintain oil level at FULL mark on dipstick.

1. Position mower on level surface.

2. Clean area around the oil dipstick to prevent foreign matter from entering the filler hole when dipstick is removed.

3. Remove dipstick and wipe oil off with a clean rag.

4. Insert dipstick. Let dipstick cap threads rest on top of tube. Do not screw dipstick in.

5. Remove dipstick and check oil level. If level is low, add only enough oil to raise level to FULL mark. DO NOT ADD OIL SO LEVEL RISES ABOVE FULL MARK BECAUSE ENGINE COULD BE DAMAGED WHEN IT IS STARTED.

The engine uses any high quality detergent oil having the American Petroleum Institute —API — "service classification" SF. The recommended oil to use is: SAE 5W20 or 5W30 (below 32° F) SAE 30 (above 32° F). SAE 10W30 or 10W40 may also be used when temperature is above 0°F.

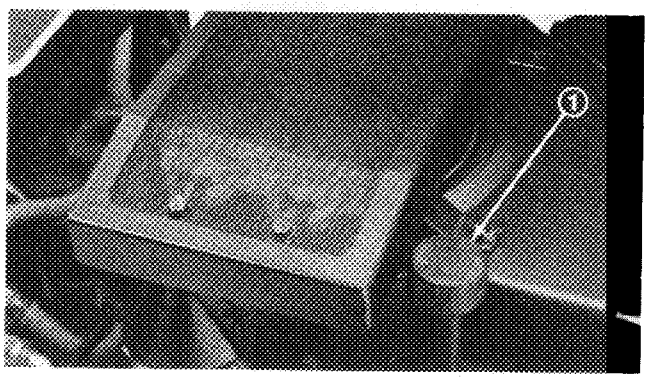


Figure 8
1. Dipstick

6. Insert dipstick into filler neck and tighten.

Note: Check level of oil after every 5 operating hours or each time the mower is used. Initially, change oil after the first 5 hours of operation; thereafter, when conditions are normal, change oil after every 25 hours of operation. However, change oil more frequently when mower is operated in dusty or dirty conditions.

CHECK HYDRAULIC OIL (Fig. 9)

The hydraulic system is designed to operate on Mobil DTE 26 or equivalent anti-wear hydraulic fluid. The machines expansion tank is filled at the factory with approximately 1-3/4 quarts of fluid. However, check level of hydraulic fluid before engine is first started and daily thereafter.

IMPORTANT: Change hydraulic oil filter initially after the first 5 hours or operation, thereafter change filter after every 250 hours of operation.

IMPORTANT: Use only hydraulic oils specified. Other fluids could cause system damage.

1. Position machine on a level surface and stop the engine.

2. Clean area around filler neck and cap of hydraulic tank. Remove cap from filler neck.

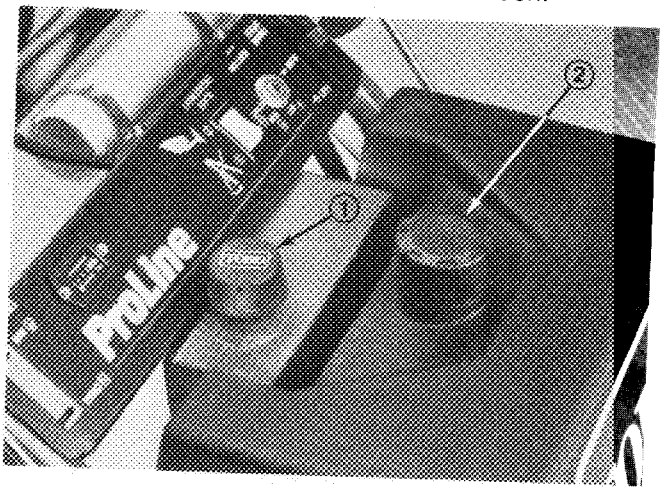


Figure 8
1. Hydraulic Tank Cap
2. Fuel Tank Cap

3. Remove dipstick from filler neck and wipe it with a clean rag. Insert dipstick and make sure it is seated all the way into filler neck; then remove it and check level of fluid. Fluid level should be in between marks on dipstick.

4. If level is low, add Mobil DTE 26 or equivalent fluid to raise level to full mark.

Hydraulic Oil (Recommended brands):

Mobil	DTE 26
Shell	Tellus 68
Amoco	Rykon Oil 68
Conoco	Super Hydraulic Oil 68
Exxon	Nuto 68
Kendall	Kenoil R&O AW 68
Pennzoil	Penreco 68
Phillips	Magnus A 68
Standard	Energol HLP 68
Sun	Sunvis 831 WR
Union	Unax AW 68
Chevron	AW Hydraulic Oil 68

Note: All are interchangeable.

5. Install dipstick and cap onto filler neck.

FILL FUEL TANK WITH GASOLINE (Fig. 9)

THE TORO COMPANY STRONGLY RECOMMENDS THE USE OF FRESH CLEAN, UNLEADED REGULAR GRADE GASOLINE IN TORO GASOLINE POWERED PRODUCTS. UNLEADED GASOLINE BURNS CLEANER, EXTENDS ENGINE LIFE, AND PROMOTES GOOD STARTING BY REDUCING THE BUILD-UP OF COMBUSTION CHAMBER DEPOSITS.

NOTE: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOHOL CONTAINING MORE THAN 10% ETHANOL, GASOLINE ADDITIVES, PREMIUM GASOLINE, OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

1. Clean area around fuel tank cap and remove cap from tank.

2. Fill uel tank to about 1 inch from top of the tank, not filler neck. Install fuel tank cap securely.

3. Wipe up spilled gasoline.

DANGER

Because gasoline is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running, hot or when machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. DO NOT SMOKE while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outside and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline before starting engine and fill tank to about I inch from top of tank, not filler neck.Store gasoline in a clean safety- approved container and keep the cap in place on the container. Keep gasoline in a cool, well-ventilated place; never in an enclosed area such as a hot storage shed. To assure volatility, do not buy more than a 30 day supply of gasoline. Gasoline is a fuel for internal combustion engines; therefore, do not use it for any other purpose. Since many children like the smell of gas, keep it out of their reach because the fumes are explosive and dangerous to inhale.

CHECK TIRE PRESSURE

Tires are over inflated at the factory. Check tires and insure they are inflated to 15 psi.

CONTROLS

Throttle Control (Fig. 10) – The throttle control has three positions: CHOKE, FAST and SLOW.

Deck Engagement Control Bail (Fig. 10) – Control bail used in conjunction with deck engagement switch to release blade brake and engage electromagnetic clutch to drive deck pulleys. Release bail to disengage deck pulleys.

Deck Engagement Switch (Fig. 10) – Rocker switch used in conjunction with control bail to release blade brake and engage electromagnetic clutch to drive deck pulleys.

Hour Meter (Fig. 10) – Shows total hours that machine has been operated. Only operates with ignition key in "ON" position.

Upper Control Bar (Fig. 10) – Push forward on control bar to engage forward traction operation and pull back to engage reverse traction operation. Push right side of control bar to turn left and left side to turn right.

Reference Handle (Fig. 10) – Limits forward travel of control bar to pre-set position to help maintain desired ground speed and direction of travel.

Ignition Switch (Fig. 10) – Switch is part of battery ignition system and it has three positions: OFF, RUN and START. Key automatically returns to RUN position from position when released after engine starts.

Fuel Shut-off Valve – (Under fuel tank) Close fuel shut-off valve when transporting or storing mower.

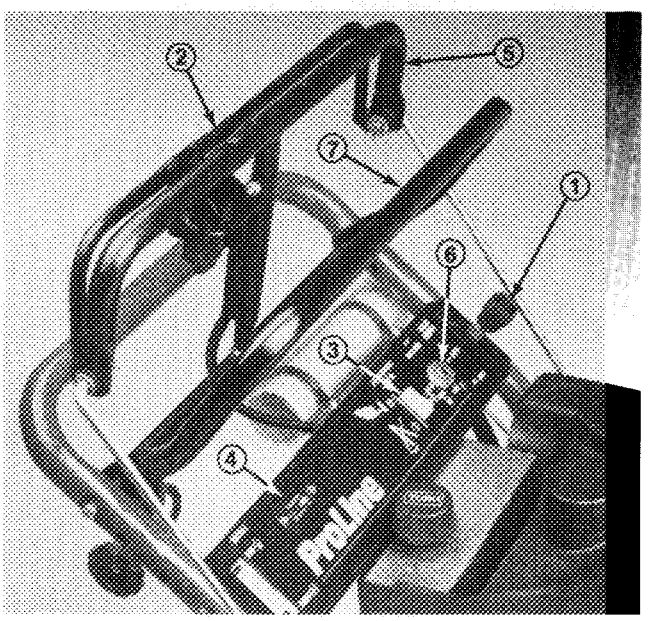


Figure 10

1. Throttle control
2. Deck engagement control bail
3. Deck engagement switch
4. Hour meter
5. Upper control bar
6. Ignition switch
7. Reference handle

OPERATING INSTRUCTIONS

STARTING AND STOPPING

1. Make sure spark plug wire is installed on spark plug and fuel valve is open.

2. Turn ignition key to RUN position.

3. Move throttle control to CHOKE position before starting a cold engine.

Note: A warm or hot engine usually does not require any choking. To start a warm engine, move throttle control to FAST position.

4. Rotate ignition key to START. When engine starts, release key, gradually move choke to run and regulate throttle to desired speed.

IMPORTANT: To prevent overheating of the starter motor, do not engage starter longer than 10 seconds. After 10 seconds of continuous cranking, wait 60 seconds before engaging starter motor again.

5. Loosen reference handle knob, adjust handle to desired position and tighten knob.

6. To engage blade, squeeze deck engagement control bail against upper control bar and press rocker switch forward. Hold control bail against control bar while operating. Releasing control bail disengages deck pulleys. Repeat procedure to engage deck pulleys if control bail is released.

7. To stop engine, release control bail and control bar, move throttle to SLOW and turn ignition key to OFF. Wait for all parts to stop moving before leaving the operating position behind handle.

8. Pull wire off spark plug to prevent possibility of accidental starting before storing machine.

9. Close fuel shut off valve before storing machine.

IMPORTANT: Make sure fuel shut off valve is closed before transporting or storing machine, as fuel leakage may occur.

OPERATING INSTRUCTIONS

PUSHING MACHINE (Fig. 11)

In an emergency the machine can be pushed for a very short distance.

1. Locate by-pass valves on each pump.

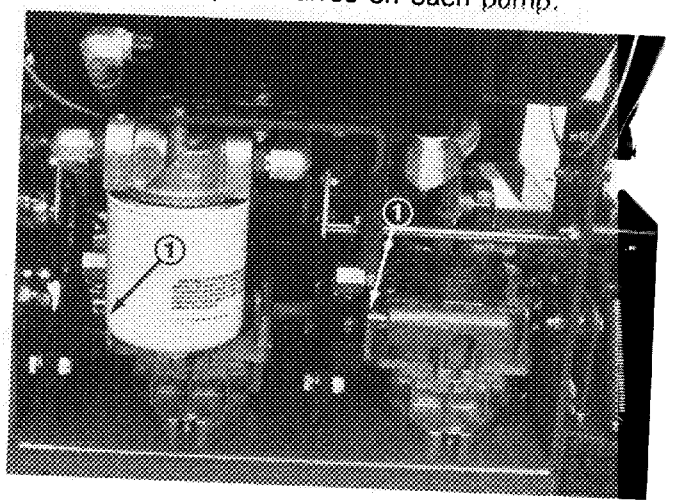


Figure 11

1. By-pass valve

2. Rotate each valve 1/2 to 3/4 turn counterclockwise.

3. Move machine to desired location and close each valve.

CHECK INTERLOCK SYSTEM

The purpose of the safety interlock system is to prevent the engine from cranking or starting unless the control bar is in NEUTRAL and to assure control bail is used in conjunction with deck engagement switch to release blade brake and engage clutch to drive deck pulleys or disengage deck pulleys when control bail is released. Check operation of the switches daily to assure interlock system is operating.

To check interlock system:

1. Position machine on a flat, open area.

2. Slowly move control bar forward, while rotating the ignition key to the START position. Engine should not crank until control bar is within 5° of neutral position. If engine cranks, the interlock system is malfunctioning and must be repaired by an Authorized TORO Proline Service Dealer. If engine does not crank, the interlock system is functioning correctly, proceed to step 3.

3. With engine running and control bar in neutral position, squeeze control bail against control bar (Do not press deck engagement switch), deck pulleys must not engage. If the interlock system is malfunctioning and must be repaired by an Authorized TORO Proline Service Dealer. If deck pulleys does not engage, the interlock system is functioning correctly, proceed to step 4.

4. With engine running and control bar in neutral position, press deck engagement switch (Do not squeeze control bail against control bar), deck pulleys must not engage. If deck pulleys engage, the interlock system is malfunctioning and must be repaired by an Authorized TORO Proline Service Dealer. If deck pulleys does not engage, the interlock system is functioning correctly, proceed to step 5.

5. With engine running, control bar in neutral position and deck pulleys engaged, release control bail. Deck pulleys must disengage. If deck pulleys do not disengage, the interlock system is malfunctioning and must be repaired by an Authorized TORO Proline Service Dealer. If deck pulleys disengage, the interlock system is functioning correctly.

CAUTION

THE INTERLOCK SWITCHES ARE FOR THE OPERATOR'S PROTECTION, SO DO NOT DISCONNECT THEM. CHECK OPERATION OF THE SWITCHES DAILY TO ASSURE INTERLOCK SYSTEM IS OPERATING. IF A SWITCH IS DEFECTIVE, REPLACE IT BEFORE OPERATING. REPLACE SWITCHES EVERY TWO YEARS TO ASSURE MAXIMUM SAFETY. DO NOT RELY ENTIRELY ON SAFETY SWITCHES – USE COMMON SENSE!

MAINTENANCE

CAUTION

To prevent accidental starting of the engine while performing maintenance, shut engine off. Also, pull wire off spark plug (Fig. 12). Make sure wire does not contact plug accidentally.

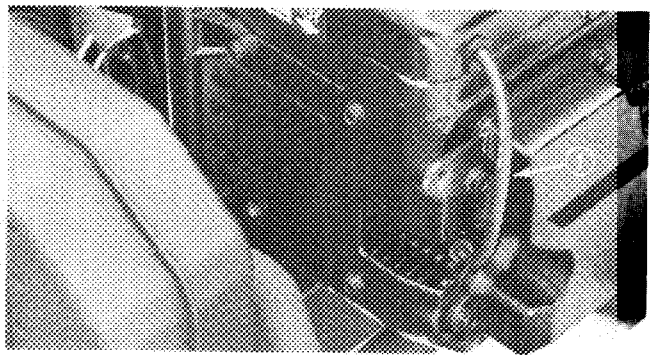


Figure 12
1. Spark plug wire

SERVICING AIR CLEANER (Fig. 13 & 14)

The foam air cleaner element must be cleaned after every 25 hours engine operation if engine is operated in clean air conditions. The paper element must be cleaned or replaced after every 50 hours engine operation if engine is operated in clean air conditions. However, elements must be cleaned every few hours if operating conditions are extremely dusty or sandy. Replace paper element yearly.

1. Remove retaining knob and lift off air cleaner cover.

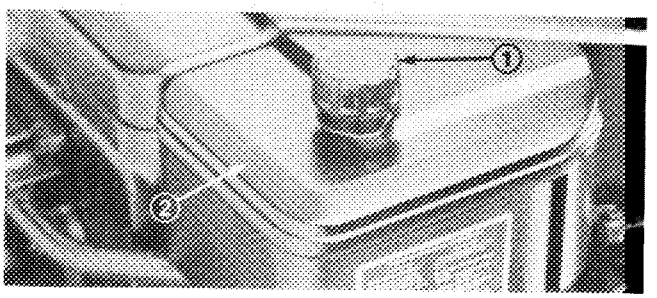


Figure 13
1. Retaining knob
2. Cover

2. Remove foam pre-cleaner by sliding it off the paper element.

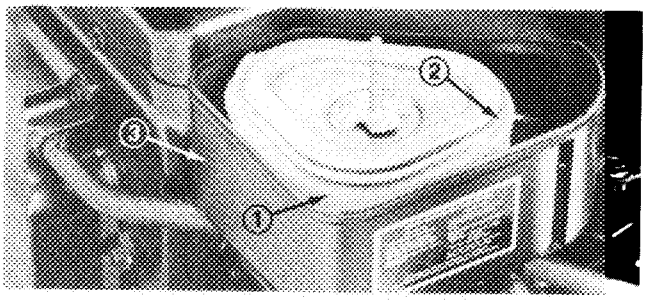


Figure 14
1. Foam element
2. Paper element
3. Air cleaner body

3. a. Wash foam pre-cleaner in detergent and warm water.

   b. Wrap foam pre-cleaner in cloth and squeeze dry. Do not wring precleaner.

   c. Saturate foam pre-cleaner in engine oil. Squeeze to remove excess oil.

4. Remove paper element and clean air cleaner body carefully to prevent dirt from entering carburetor.

5. Clean paper element by gently tapping flat side of element.

   a. If very dirty, replace cartridge.

IMPORTANT: Do not wash the paper element or use pressurized air, as damage will occur.

6. Reassemble air cleaner components.

IMPORTANT: Always operate engine with air cleaner elements in place or engine damage will result.

CHANGING ENGINE OIL AND FILTER (Fig. 15)

Change oil after first 5 hours of operation; every 25 hours thereafter. Change oil more frequently when operating conditions are extremely dusty or dirty.

1. Position mower on level surface. Start and run engine for a period to warm the oil.

2. Turn engine off and place drain pan under frame, below drain plug. Remove drain plug and allow all oil to flow into drain pan. Install drain plug after oil stops flowing.

3. Remove dipstick and add oil to crankcase. Refer to CHECK ENGINE OIL LEVEL, page 8. Capacity of crankcase is 4 pints when changing filter, 3 pints when changing oil only. DO NOT OVERFILL or engine damage may result.

Change the oil filter every other oil change. To change filter:

1. Drain the oil from the engine crankcase, refer To Change Oil, page 12.

2. Remove the oil filter drain plug located at the base of the oil filter adapter. Drain oil into pan.

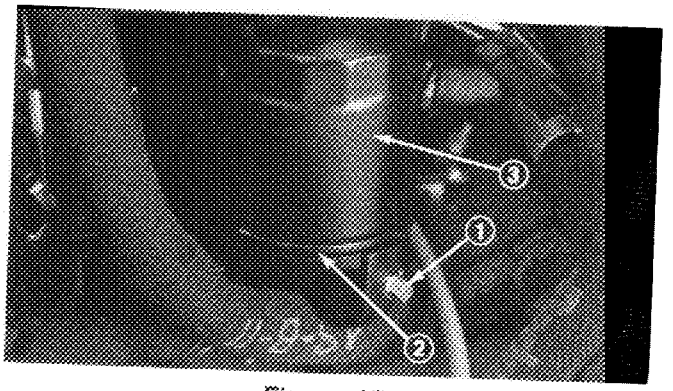


Figure 15
1. Oil filter drain plug
2. Filter adapter
3. Oil filter

3. Remove old filter and wipe off the filter adapter. Reinstall the filter drain plug.

4. Apply a thin coating of new oil to the rubber gasket on the new oil filter.

5. Install the new oil filter to the filter adapter. Tighten oil filter clockwise until the rubber gasket contacts the filter adapter, then tighten the filter an additional 1/4 turn. Fill the crankcase with new oil (4 pints). Refer to CHECK ENGINE OIL LEVEL, page 8.

REPLACING HYDRAULIC FILTER (Fig. 16)

Change hydraulic filter initially after the first 5 operating hours, thereafter change every 250 hours.

1. Position machine on a level surface, stop the engine, and remove key from ignition switch.

2. Clean area around filter mounting area. Place drain pan under filter and remove filter.

Note: Make sure oil is completely drained before installing new filter.

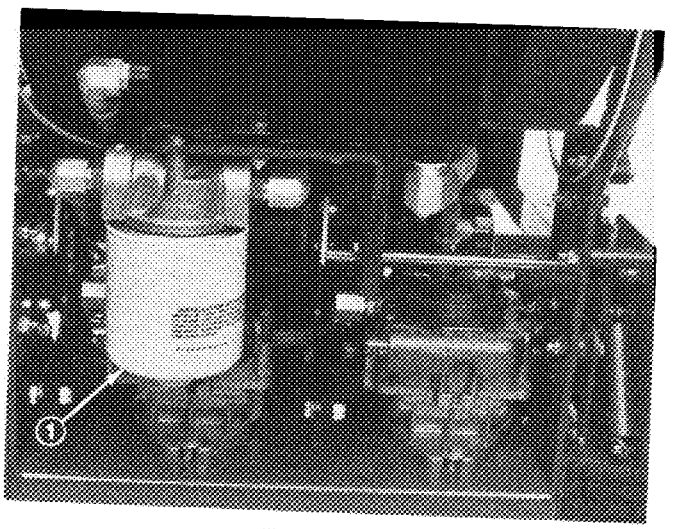


Figure 16
1. Hydraulic Filter

3. Lubricate new filter gasket and fill the filter with hydraulic oil.

4. Assure filter mounting area is clean. Screw filter on until gasket contacts mounting surface. Then tighten filter one-half turn.

5. Check level of oil and add enough to raise level to FULL mark on dipstick. DO NOT OVER FILL.

6. Start engine and let run for about two minutes to purge air from the system. Stop the engine and check for leaks.

BLEEDING HYDRAULIC SYSTEM

Although the traction system is self bleeding, it may be necessary to bleed system if oil is changed or work on the system is necessary.

1. Raise the rear of machine until wheels are off the floor and support with jack stands or a box.

2. Start the engine and run at idle speed. Engage traction on one side and spin the wheel by hand.

3. When the wheel begins to spin on its own, keep it engaged for approximately 2 more minutes.

4. Check hydraulic fluid level as it drops and add as required to maintain level.

5. Repeat procedure on opposite wheel.

CHECKING HYDRAULIC LINES AND HOSES

After every 100 operating hours, check hydraulic lines and hoses for leaks, kinked lines, loose mounting supports, wear, loose fittings, weather deterioration and chemical deterioration. Make all necessary repairs before operating.

WARNING

Keep body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid. Use cardboard or paper to find hydraulic leaks. Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

MAINTENANCE

FUEL FILTER REPLACEMENT (Fig. 17)

An in-line filter is incorporated into the fuel line between the fuel tank and carburetor . Use the following procedures should replacement become necessary:

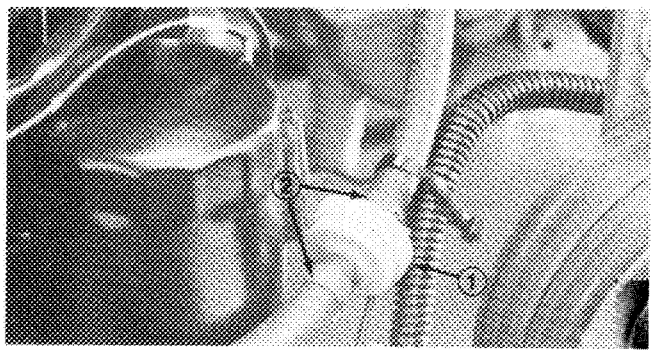


Figure 17
1. Fuel filter
2. Hose clamps

1. Close fuel shut off valve, loosen the hose clamp on the carburetor side of filter and remove the fuel line from the filter.

2. Place a drain pan under filter, loosen the remaining hose clamp and remove filter.

CAUTION

Since gasoline is highly flammable, drain it outdoors and make sure engine is cool to prevent a potential fire hazard. Wipe up any gasoline that may have spilled. Do not drain gasoline near any open flame or where gasoline fumes may be ignited by a spark. Do not smoke a cigar, cigarette, or a pipe when handling gasoline.

3. Install the new filter with arrow on the filter body pointing towards the carburetor.

NEUTRAL ADJUSTMENT (Fig. 18)

If either wheel creeps when control bar is in the neutral position an adjustment is required.

1. Raise the rear of machine until wheels are off the floor and support with jack stands or a box.

2. Start the engine and run at 3/4 throttle.

3. If either tire rotates on it own, loosen the bolt and move the two brackets against each other until wheel rotation stops, then tighten bolt.

4. Repeat procedure on opposite wheel, if required.

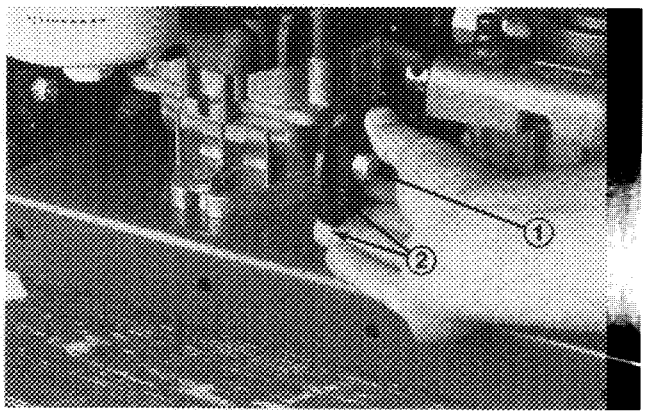


Figure 18
1. Bolt
2. Brackets

REPLACING SPARK PLUG (Fig. 19)

Since air gap between center and side electrodes of the spark plug increases gradually during normal operation of the engine, check condition of electrodes after every 50 operating hours. Recommended air gap is 0.035 of an inch (0.9 mm). Correct spark plug to use is a Champion RC 12YC.

Note: The spark plug usually lasts a long time; however, the plug should be removed and checked whenever the engine malfunctions.

1. Clean area around spark plug so foreign matter cannot fall into cylinder when spark plug is removed.

2. Pull spark plug wire off spark plug and remove plug from cylinder head.

3. Check condition of side electrode, center electrode, and center electrode insulator to assure there is no damage.

IMPORTANT: A cracked, fouled, dirty or otherwise malfunctioning spark plug must be replaced. Do not sand blast, scrape, or clean electrodes by using a wire brush because grit may eventually release from the plug and fall into the cylinder. The result is usually a damaged engine.

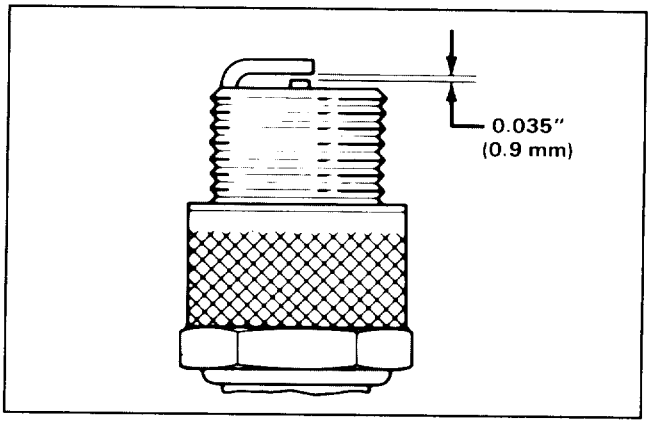


Figure 19

4. Set air gap between center and side of electrodes at 0.035 of an inch (0.9 mm). Install correctly gapped spark plug w/gasket seal, and tighten plug to 18 ft-lb (24.4 Nm). If torque wrench is not used, tighten plug firmly.

ADJUSTING THROTTLE-CHOKE CONTROL (Fig. 20)

Proper choke operation is dependent upon proper adjustment of the throttle control. Before adjusting the carburetor, assure the throttle control is operating properly.

1. Remove the retaining knob holding air cleaner in place and lift air cleaner assembly off carburetor.

2. Move throttle control to CHOKE position and check the position of the choke butterfly; it should be fully closed.

3. Move throttle control to FAST position. The butterfly should be in the fully open position.

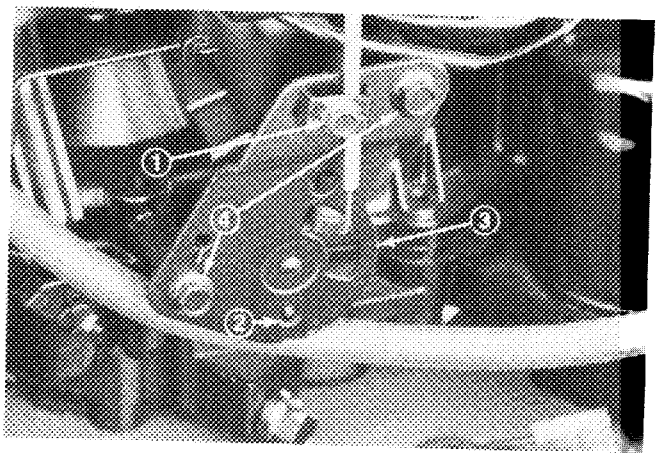


Figure 20
1. Clamp screw
2. Aligned holes
3. Control plate
4. Mounting screws (2)

4. If the choke butterfly is positioned as described in steps 2 and 3, replace the air cleaner assembly and continue operation.

If either the choke butterfly does not close or is not fully open in the FAST position, adjust the throttle control as follows:

1. Place throttle control in FAST position.

2. Loosen the throttle cable clamp screw (Fig. 20) and move the control cable casing and wire until the hole in speed control is aligned with hole in control plate. Tighten cable clamp.

3. Turn in choke adjusting screw (located behind control plate) until light contact is made with flange on control lever.

4. Reassemble air cleaner to carburetor.

5. Start engine and let it warm up for approximately two minutes. Next, make sure throttle control is in FAST position.

DANGER

Engine must be running so final adjustment of the throttle can be performed. To guard against possible personal injury, shift into neutral, and engage parking brake. Keep hands, feet, face, and other parts of the body away from the cutter blades, underside of mower housing, discharge area, and any rotating engine parts.

6. Loosen (2) control panel mounting screws.

7. Slide control panel up or down to obtain 3200 ± 100 RPM. Check with tachometer.

8. Tighten control plate mounting screws making sure adjustment is not disturbed.

9. Recheck choke adjusting screw adjustment per instructions in step #3.

10. After throttle is adjusted, stop engine.

ADJUSTING CARBURETOR (Fig. 21)

The carburetor has been set at the factory, but an occasional adjustment may be required. An adjustment may be required to compensate for differences in fuel or temperature.

IMPORTANT: Before the carburetor is adjusted, throttle control must be checked for proper operation: refer to Adjusting Throttle-Choke Control, page 15.

1. Idle Fuel Screw — Close screw by gently rotating it clockwise.

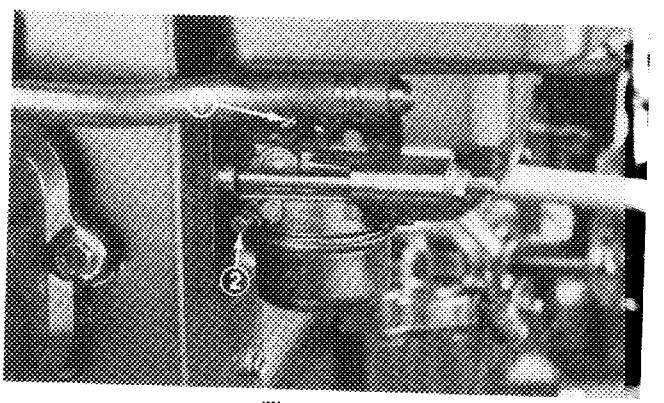


Figure 21
1. Idle speed screw
2. Idle fuel screw

IMPORTANT: Do not close the screw too tight because the valve and seat in carburetor will likely be damaged.

2. Rotate — open — the screw 1 turn counterclockwise.

Note: The idle mixture screw Setting is an approximate; however, the setting will allow engine to be started so carburetor can be fine tuned.

3. Start engine and let it warm up at half throttle for approximately five to ten minutes. Next, move throttle control in SLOW detent.

DANGER

Engine must be running so final adjustment of the throttle can be performed. To guard against possible personal injury, shift into neutral, and engage parking brake. Keep hands, feet, face, and other parts of the body away from the cutter blades, underside of mower housing, discharge area, and any rotating engine parts.

4. Idle Speed Screw — Set the idle speed to 1200 rpm ± 75 RPM by turning the idle speed screw in or out. Check speed with a tachometer.

5. Idle Fuel Screw — With throttle in slow position, turn screw out (counterclockwise) until the engine speed decreases (rich). Note position of the screw.

Now turn the screw in (clockwise). The engine speed may increase, then it will decrease as the screw is turned in (lean). Note position of the screw.

Set the screw midway between the rich and lean settings.

6. Recheck idle speed using a tachometer.

ADJUSTING AND REPLACING TRACTION BELT (Fig. 22)

1. Slide belt off idler pulley.

2. Remove left front engine mounting bolt securing clutch retainer to frame. Unhook retainer from clutch and remove retainer.

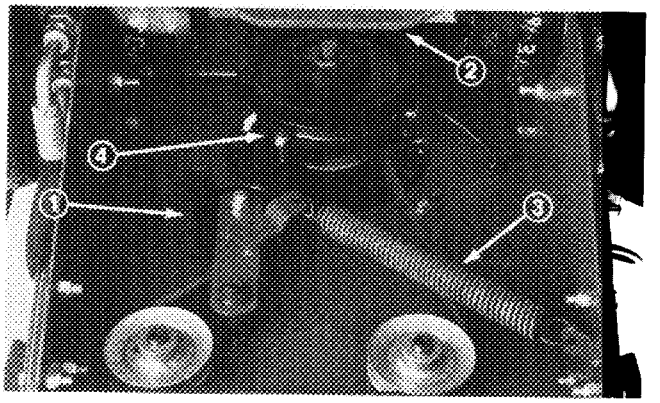


Figure 22

1. Idler pulley
2. Clutch retainer
3. Spring
4. Locknut on flange stud

3. Disconnect in-line wire connector and remove belt from idler pulley.

4. Unhook idler pulley spring from side of machine.

5. Remove belt from clutch and drive pulleys.

6. Install new belt around clutch and drive pulleys.

7. Secure in-line connectors and reinstall clutch retainer to clutch and frame with engine mounting bolt. Torque engine mounting bolt to 170–220 in-lb.

8. Route belt around clutch and drive pulleys.

9. Reinstall idler spring.

10. Reinstall belt on idler pulley.

ADJUSTING CLUTCH (Fig. 22)

The clutch is adjustable to ensure proper engagement.

1. To adjust clutch, tighten or loosen locknuts on flange studs.

2. Check adjustment by inserting feeler gauge thru slots next to flange studs.

3. The proper disengaged clearance between the clutch plates is .012 – .018 inches. It will be necessary to check this clearance at each of the three slots to ensure the plates are parallel to each other.

CLEANING COOLING SYSTEM (Fig. 23)

Clean any build-up of grass, dirt or other debris from the engine and oil cooler frequently to help insure adequate cooling and correct engine operation and reduce the possibility of overheating and mechanical damage.

1. Removing Debris – Remove debris from engine area and oil cooler daily, clean more frequently in dirty conditions.

IMPORTANT: Do not allow debris to accumulate during operation. Stop machine, shut off engine and thoroughly clean off any buildup.

MAINTENANCE

A. Turn engine off. Clean engine area thoroughly of all debris. Inspect area between cooler and screen and under side of cooler for debris. If debris is present proceed to next step.

B. Remove (4) screws securing oil cooler to top of engine.

C. Clean both sides of oil cooler thoroughly with compressed air. Pivot oil cooler back into position and secure with screws.

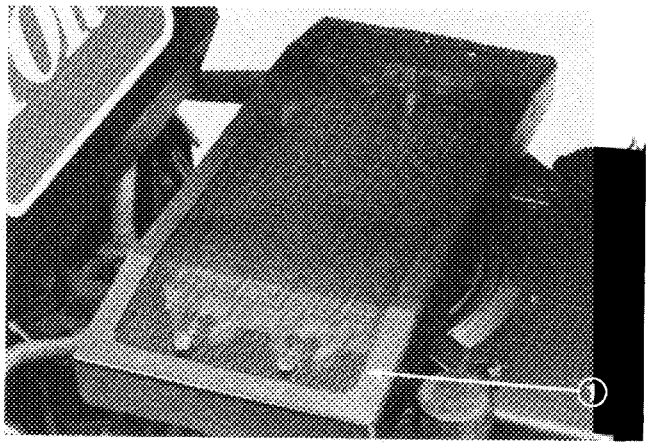
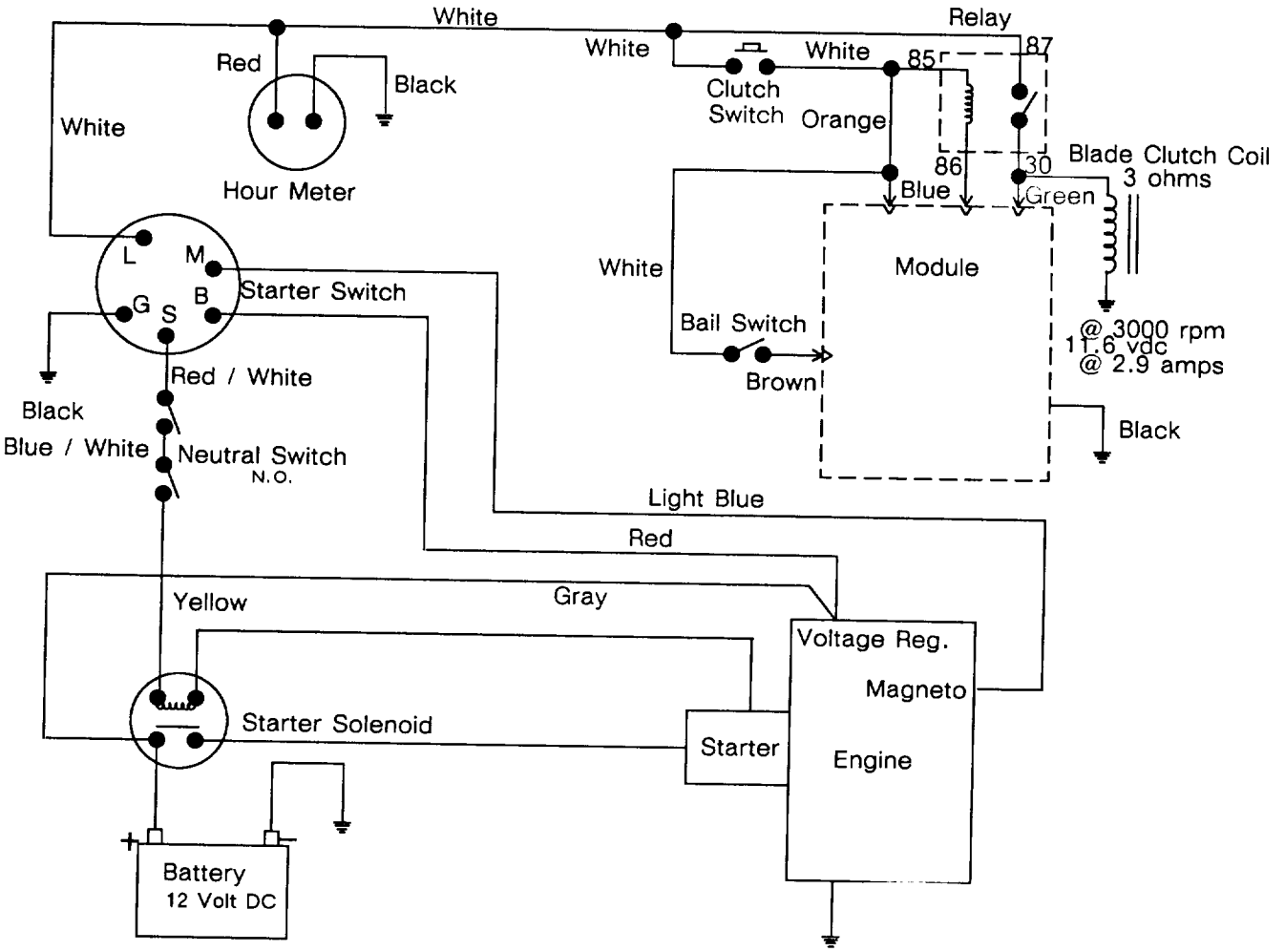
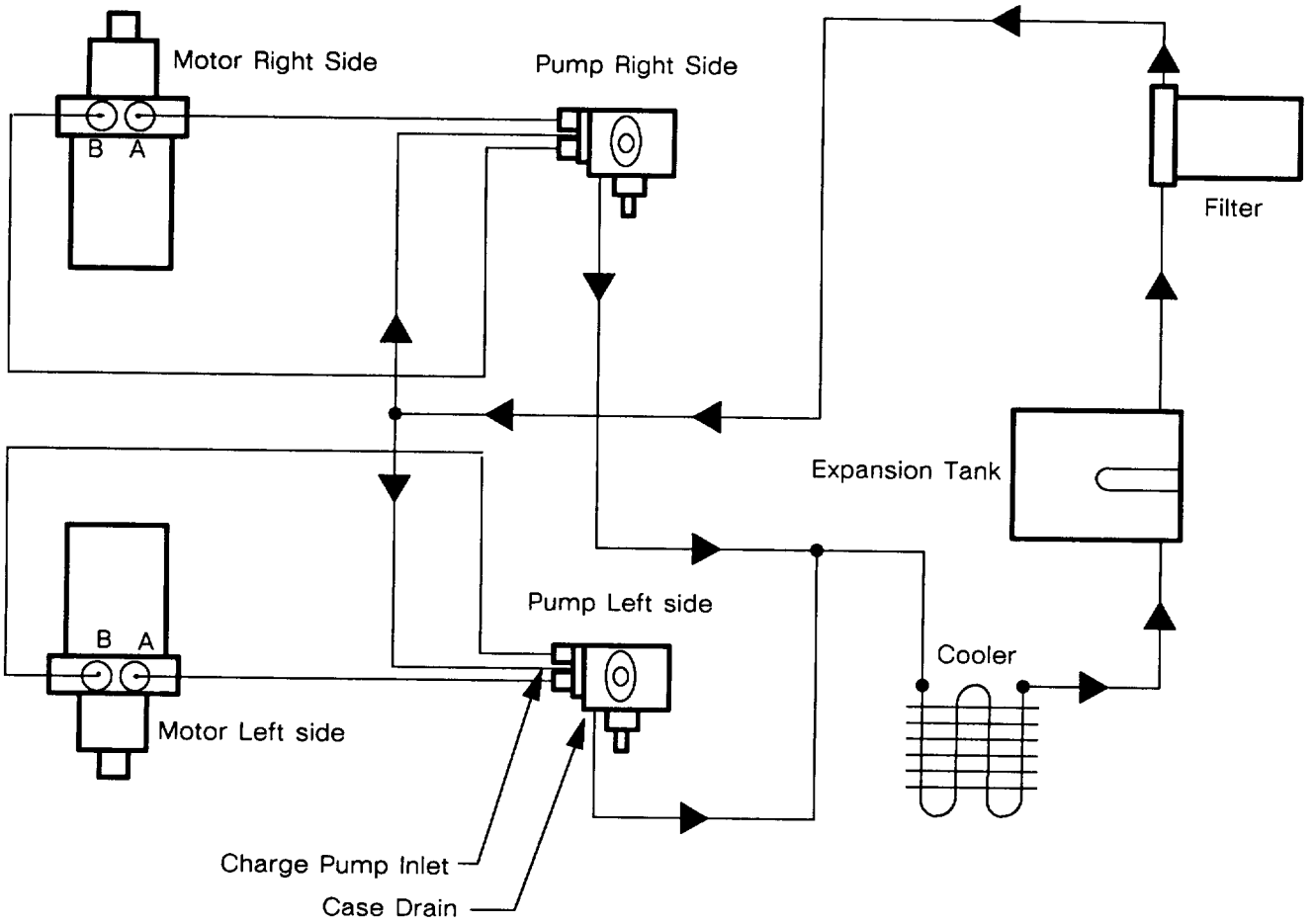


Figure 23
1. Oil cooler

WIRING SCHEMATIC



HYDRAULIC SCHEMATIC



IDENTIFICATION AND ORDERING

The mower has two identification numbers: a model number and a serial number. The two numbers are stamped into a plate that is riveted to the frame on right front corner of mower. In any correspondence concerning the mower, supply the model and serial numbers to assure that correct information and replacement parts are obtained.

To order replacement parts from an authorized TORO Distributor, supply the following information:

1. Model and serial numbers of the machine.
2. Part number, description and quantity of parts desired.

Note: Do not order by reference number if a parts catalog is being used; use the part number.

MAINTENANCE CHART

Date	Hours Used	Cooling System	Air Cleaner Service	Lubrication	Sharpen Blade	Winter Storage	Spring Service	Spark Plug

The Toro Promise

A ONE YEAR LIMITED WARRANTY

The Toro Company promises to repair your TORO Product if defective in materials or workmanship. The following time periods from the date of purchase apply:

Commercial Products . . . . . 1 Year

The cost of parts and labor are included, but the customer pays the transportation costs on walk rotary mowers with cutting unit widths of less than 25".

If you feel your TORO product is defective and wish to rely on The Toro Promise, the following procedure is recommended:

1. Contact your Authorized TORO ProLine Service Dealer (the Yellow Pages of your telephone directory is a good reference source).
2. The TORO ProLine Service Dealer will advise you on the arrangements that can be made to inspect and repair your product.
3. The TORO ProLine Service Dealer will inspect the product and advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without an extra charge to you.

If for any reason you are dissatisfied with the distributor's analysis of the defect or the service performed, you may contact us.

Write:
TORO Consumer Products Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

The above remedy of product defects through repair by an Authorized TORO ProLine Service Dealer is the purchaser's sole remedy for any defect.

THERE IS NO OTHER EXPRESS WARRANTY. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This Warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accidents, or lack or proper maintenance. Regular, routine maintenance of the unit to keep it in proper condition is the responsibility of the owner.

All warranty repairs reimbursable under the Toro Promise must be performed by an Authorized TORO ProLine Service Dealer using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO ProLine Service Dealer are not reimbursable under the Toro Promise. In addition, these unauthorized repair attempts may result in additional malfunctions, the correction of which is not covered by warranty.

THE TORO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT INCLUDING ANY COST OR EXPENSE OF PROVIDING SUBSTITUTE EQUIPMENT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

COUNTRIES OTHER THAN THE UNITED STATES OR CANADA

Customers who have purchased TORO products exported from the United States or Canada should contact their TORO Distributor (Dealer) to obtain guarantee policies for your country, province or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the TORO importer. If all other remedies fail, you may contact us at The Toro Company.

Compliance with Radio Interference Regulations Certified.
Certifie Conforme au Reglement sur le Brouillage Radioelectrique.

Litho in U.S.A.